What is claimed is:

1. An information processing apparatus comprising:

at least one sensor section for detecting circumstances inside of a predetermined detection space and for capturing detection information pertaining to the circumstances detected;

a parameter conversion section for determining, on the basis of the detection information output from the sensor section, a first parameter pertaining to an object located in a plurality of pixels for each of the at least one sensor section, the pixels corresponding to sub-divisions formed by dividing the detection space, and for assigning the first parameter to respective pixels; and

a parameter integration section for integrating the first parameter assigned to the pixels on a per-pixel basis, and for assigning a second parameter to the pixels, the second parameter being a result of integration of the first parameter.

2. The information processing apparatus according to claim 1, wherein, in a case where the detection information includes a parameter representing a position of the object, the parameter conversion section performs the following operations for the sensor section,

(1) selection of a pixel including the position of the object indicated by the detection information output from the

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sensor section, and

(2) assignment of first parameter produced from the detection information to only the selected pixel.

3. The information processing apparatus according to claim 1, wherein, in a case where the detection information includes a parameter representing a position of the object, there is included an information accuracy storage section for storing, for each of the at least one sensor section, the accuracy of detection information pertaining to the object located in respective pixel within the detection space, and

the parameter conversion section performs the following operations for each sensor section,

(1) selection of a pixel including the position of the object indicated by the detection information output from the sensor section, and

(2) assignment of first parameter produced from the detection information to pixels located in an area, which area is set in the detection space on the basis of the accuracy of detection information pertaining to the sensor section provided in the selected pixel and on the basis of the position of the selected pixel.

4. The information processing apparatus according to claim 1, wherein one of the at least one first parameter assigned

to the single pixel indicates presence of the object located in the pixel.

5. The information processing apparatus according to claim 1, wherein one of the at least one first parameter assigned to the single pixel indicates the moving state of an object located in the pixel.

6. The information processing apparatus according to claim 1, further comprising a reliability storage section for storing, for each sensor section, predetermined first reliability which is the reliability of the first parameter assigned to respective pixel on the basis of the detection information.

7. The information processing apparatus according to claim 1, further comprising a first reliability derivation section for deriving, for each sensor section, first reliability which is the reliability of the first parameter assigned to respective pixel on the basis of the detection information, wherein the first degree based on the sensor section increases with an increase in the capability of the sensor section for detecting the circumstances inside of the detection space.

8. The information processing apparatus according to

claim 7, wherein, in a case where the sensor section is installed in a vehicle, a timing at which the first reliability is derived is equal to a timing at which an ignition switch of the vehicle is brought into conduction.

9. The information processing apparatus according to claim 7, wherein a timing at which the first reliability is derived is equal to a timing at which the detection capability of the at least one sensor section is changed.

10. The information processing apparatus according to claim 6 , wherein one of the at least one first parameter assigned to the single pixel is a vector indicating the moving state of the object situated in the pixel, and the first reliability includes the reliability of the vector indicating the moving state of the object.

11. The information processing apparatus according to claim 6, wherein one of the at least first parameter assigned to the single pixel is a vector indicating the moving state of the object situated in the pixel, and the first reliability includes the reliability of a plurality of components of the vector indicating the moving state of the object.

12. The information processing apparatus according to

claim 6, wherein the parameter integration section assigns, on a per-pixel basis, a weight to the first parameter assigned to the pixel, in accordance with the first reliability of the pixel, thereby integrating the first parameter.

13.   The information processing apparatus according to claim 6, further comprising a reliability integration section for integrating, on a per-pixel basis, the degrees of first reliability of the pixel and assigning the result of integration of the first reliability to the pixel as a second reliability indicating the reliability of the second parameter.

14.   The information processing apparatus according to claim 13, wherein the second reliability of the single pixel represents a sum total of degrees of first reliabilities of all of the at least one sensor section provided in the pixel.

15.   The information processing apparatus according to claim 13, further comprising an environment recognition section for recognizing the environment of the sensor section, wherein the second reliability of the single pixel represents the sum total of degrees of the first reliability which are assigned to all sensors provided in the pixel and are weighted by a constant corresponding to the influence of the environment recognized by the sensor section.

16. The information processing apparatus according to claim 13, further comprising:

a processing execution section capable of performing any of possible adaptive tasks through use of integration information formed from the second parameters assigned to all pixels provided in the detection space; and

a processing selection section for selecting an adaptive task allowed to be performed, from among all adaptive tasks using integration information, on the basis of the latest second reliability of all pixels, wherein the processing execution section performs the selected adaptive task.

17. The information processing apparatus according to claim 16, further comprising:

a reference reliability storage section for storing, for each adaptive task, reference reliability which is a lower threshold of second reliability assigned to all pixels in a case where performance of an adaptive task is allowed to be performed, wherein

the processing selection section compares, on a per-pixel basis, the latest second reliability of a pixel with reference reliability corresponding to the adaptive task assigned to the pixel, for each adaptive task, and in a case where the latest second reliability is greater than the reference reliability,

it is determined that performance of the adaptive task is allowed.

18.   The information processing apparatus according to claim 16, wherein, in a case where the sensor section is installed in a vehicle, the processing selection section performs selection of the adaptive task at a point in time when the ignition switch of the vehicle is brought into conduction.

19.   The information processing apparatus according to claim 16, further comprising

a first reliability derivation section for deriving the latest first reliability corresponding to the sensor section for each of the at least one sensor section each time the detection capability of the sensor section changes, wherein

the reliability integration section integrates the degrees of first reliability each time the first reliability corresponding to the at least one sensor section is given; and

the processing selection section selects the adaptive task each time the first reliability corresponding to the at least one sensor section is output.

20.   The information processing apparatus according to claim 1, further comprising:

a control information generation section for generating,

from the integration information, control information pertaining to the object located within the detection space; and

a processing execution section for executing an adaptive task using control information, wherein the control information is formed from parameters acceptable to the processing execution section.

21. The information processing apparatus according to claim 20, wherein, in a case where the second reliability which is the reliability of a second parameter is set on a per-pixel basis, where the control information includes a parameter indicating the position of an object, and where a second parameter assigned to the pixel having second reliability greater than a predetermined threshold value indicates the presence of an object in the pixel, the control information generation section determines the position of the object in the detection space on the basis of the position of the pixel.

22. The information processing apparatus according to claim 20, wherein, in a case where the second reliability is greater than a threshold value, where two or more pixels whose second parameters indicating presence of the object are continuously provided, and where second parameters assigned to the continuously-provided pixels are analogous to each other,

the control information generation section integrates the second parameters assigned to the continuously-provided pixels and produces, from the result of integration of the second parameters, control information pertaining to a single object located within an area formed of the continuously-provided pixels.

23. The information processing apparatus according to claim 20, wherein, in a case where the control information includes a parameter indicating the position of the edge of the object, the control information generation section determines the position of a pixel located at an outermost position in the area formed from the continuously-provided pixels, as the position of the edge of the object located in the area.

24. The information processing apparatus according to claim 20, wherein, in a case where the control information includes a parameter indicating the moving velocity of the object, the control information generation section calculates, as the moving velocity of the object within the area, a mean value of the moving velocities indicated by the second parameters assigned to the pixels located in the area formed from the continuously-provided pixels.

25.   The information processing apparatus according to claim 20, wherein, in a case where the control information includes a parameter indicating the moving velocity of the object, the control information generation section calculates, as a parameter indicating the moving velocity of the object in the area, a velocity at which the vehicle and the object approach each other most closely, from among the moving velocities indicated by the second parameters assigned to all the continuously-provided pixels in the area.

26.   The information processing apparatus according to claim 1, wherein, in a case where the sensor section is installed in a vehicle, the area of the detection space ahead of the vehicle is wider than the area of the detection space behind the vehicle, with reference to the travel direction thereof.

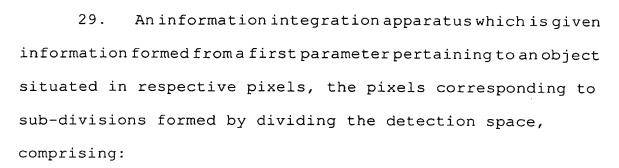27.   An information capturing apparatus comprising:

a sensor section for capturing detection information pertaining to circumstances of a predetermined detection space; and

a parameter conversion section for producing a first parameter pertaining to an object situated in respective pixels, the pixels corresponding to sub-divisions formed by dividing the predetermined detection space, on the basis of detection information output from the sensor section, and for assigning the thus-produced first parameters to the pixels.

28.   An information processing apparatus which is given at least conversion information formed from a first parameter pertaining to an object situated in respective pixels, the pixels corresponding to sub-divisions formed by dividing a detection space, comprising:

an information storage section for storing, for each given information piece, the first parameter by assigning the first parameter to each of pixels located in the detection space; and

a parameter integration section for integrating, on a per-pixel basis, the first parameter assigned to each pixel and assigning a second parameter to the pixel, the second parameter being the result of integration of the first parameter.

29.   An information integration apparatus which is given information formed from a first parameter pertaining to an object situated in respective pixels, the pixels corresponding to sub-divisions formed by dividing the detection space, comprising:
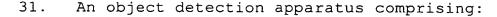
a first reliability storage section for storing predetermined first reliability of the first parameter assigned to each of the pixels; and

a weighting section for assigning a weight to the first parameter assigned to each pixel in accordance with the first reliability and for assigning the weighted first parameter to the pixel.

30.   A controller which is given information formed from a parameter pertaining to an object situated in respective pixels, the pixels corresponding to sub-divisions formed by dividing the detection space, comprising:

a control information generation section for generating control information pertaining to the object situated in the detection space, from the given information; and

a processing execution section for performing processing using the control information, wherein the control information is formed from a parameter acceptable to the processing execution section.

31.   An object detection apparatus comprising:

a sensor section capable of detecting the presence of an object in at least a portion of a predetermined detection space; and

a reliability setting section for setting the reliability of the sensor section provided in one of a plurality of sub-divisions formed by dividing the detection space.

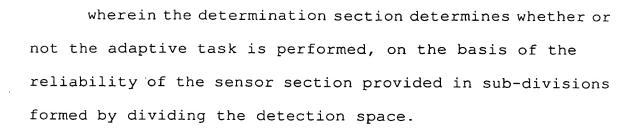32.   An object detection apparatus comprising:

a sensor section capable of detecting presence of an object in at least a portion of a predetermined detection space; and

a reliability integration section for integrating degrees of reliability of respective sub-divisions formed by dividing the detection space,

wherein the reliability integration section integrates the degrees of reliability of the sensors in each of the sub-divisions.

33.   An information processing apparatus comprising:

a sensor section capable of detecting presence of an object in at least a portion of a predetermined detection space; and

a determination section for determining whether or not there is performed an adaptive task, the adaptive task being performed on the basis of detection information output from the sensor section,

wherein the determination section determines whether or not the adaptive task is performed, on the basis of the reliability of the sensor section provided in sub-divisions formed by dividing the detection space.

34.   An information processing apparatus comprising:

at least one sensor section capable of detecting presence of an object in at least a portion of a predetermined detection space; and

a determination section for determining whether or not there is performed an adaptive task, the adaptive task being performed on the basis of detection information output from the sensor section,

wherein the determination section determines whether or not the adaptive task is performed, on the basis of the result of integration of the degrees of reliability of the sensor section performed in each of the sub-divisions.

35. An information processing method for processing at least one detection information piece pertaining to the circumstances of inside of a predetermined detection space, the method comprising:

determining, on the basis of the detection information, a first parameter pertaining to an object located in a plurality of pixels, the pixels corresponding to sub-divisions formed

by dividing the detection space;

assigning the first parameter to respective pixels; and

integrating the first parameter assigned to the pixels,
on a per-pixel basis; and

assigning a second parameter to the pixels, the second
parameter being result of integration of the first parameter.